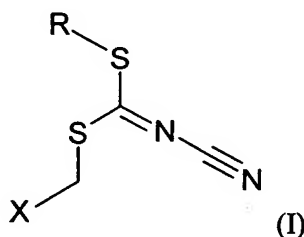


AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of the claims in the application:

1. (Previously Presented) A method for controlling the growth of at least one fungus on a tanned hide comprising the step of contacting a hide prior to, during and after tanning with a cyanodithiocarbamate of formula (I):



X is a halogen;

R is a substituted or unsubstituted  $C_1$ - $C_{14}$  alkyl group, a substituted or unsubstituted  $C_2$ - $C_{14}$  alkenyl group, a substituted or unsubstituted  $C_2$ - $C_{14}$  alkynyl group, a substituted or unsubstituted group defined by  $Y-Ar-(CH_2)_m$ - or by  $Z-(CH_2)_n$ -;

Ar is a substituted or unsubstituted aryl group selected from phenyl, and naphthyl;

Y is H, halogen,  $NO_2$ ,  $R^1$ ,  $R^1O$ , or  $R^1R^2N$ ;

Z is  $NC$ ,  $R^1O$ ,  $R^1OC(O)$ , or  $R^1OCH_2CH_2(OCH_2CH_2)_p$

m ranges from 0 to 3;

n ranges from 0 to 3;

p ranges from 0 to 3; and

$R^1$  and  $R^2$  are independently H, substituted or unsubstituted  $C_1$ - $C_5$  alkyl;

in an amount effective to control the growth of at least one fungus on the tanned hide.

2. (Previously Presented) A method of claim 1, wherein:

X is Cl, Br, or I;

R is a substituted or unsubstituted  $C_1$ - $C_7$  alkyl group, a substituted or unsubstituted  $C_2$ - $C_7$  alkenyl group, a substituted or unsubstituted group defined by  $Y-Ar-(CH_2)_m$ - or by  $Z-(CH_2)_n$ -;

Ar is phenyl;

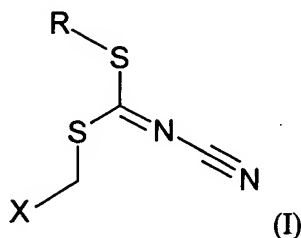
Y is H, Cl, Br, I,  $NO_2$ ,  $R^1$ ,  $R^1O$ , or  $R^1R^2N$ ;

Z is NC, R<sup>1</sup>O, R<sup>1</sup>OC(O), or R<sup>1</sup>OCH<sub>2</sub>CH<sub>2</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>p</sub>

m is 0 or 1; and

R<sup>1</sup> and R<sup>2</sup> are independently H, methyl, or ethyl.

3. (Currently Amended) A method of claim 1, wherein  
X is Cl and R is -CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>5</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>7</sub>CH<sub>3</sub>,  
-(CH<sub>2</sub>)<sub>11</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>, -CH(CH<sub>3</sub>)(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>3</sub>OH,  
-(CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CH<sub>2</sub>CN, -CH<sub>2</sub>CH=CH<sub>2</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>,  
-CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>;  
X is Br and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>; or  
X is I and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>.
4. (Previously Presented) A method of claim 1, wherein the cyanodithiocarbamate of formula (I) is hexyl chloromethyl cyanodithiocarbamate.
5. (Previously Presented) A method of claim 1, wherein the leather substrate is a wet blue hide a wet white hide, a vegetable-tanned hide or an oil-tanned hide.
6. (Previously Presented) A method of claim 3, wherein the leather substrate is a wet blue hide a wet white hide, a vegetable-tanned hide or an oil-tanned hide.
7. (Previously Presented) A method of claim 4, wherein the leather substrate is a wet blue hide a wet white hide, a vegetable-tanned hide or an oil-tanned hide.
8. (Previously Presented) A method for controlling the growth of microorganisms on a hide during a leather tanning process comprising the step of contacting a hide susceptible to fungal growth with a tanning liquor containing a cyanodithiocarbamate of formula (I):



X is a halogen

R is a substituted or unsubstituted C<sub>1</sub>-C<sub>14</sub> alkyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>14</sub> alkenyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>14</sub> alkynyl group, a substituted or unsubstituted group defined by Y-Ar-(CH<sub>2</sub>)<sub>m</sub>- or by Z-(CH<sub>2</sub>)<sub>n</sub>-;

Ar is a substituted or unsubstituted aryl group selected from phenyl, and naphthyl;

Y is H, halogen, NO<sub>2</sub>, R<sup>1</sup>, R<sup>1</sup>O, or R<sup>1</sup>R<sup>2</sup>N;

Z is NC, R<sup>1</sup>O, R<sup>1</sup>OC(O), or R<sup>1</sup>OCH<sub>2</sub>CH<sub>2</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>p</sub>

m ranges from 0 to 3;

n ranges from 0 to 3;

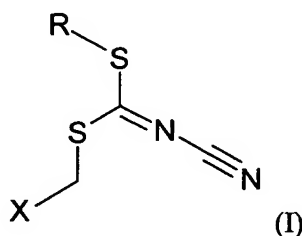
p ranges from 0 to 3; and

R<sup>1</sup> and R<sup>2</sup> are independently H, substituted or unsubstituted C<sub>1</sub>-C<sub>5</sub> alkyl;

in an amount effective to control the growth of at least one fungus on the hide.

9. (Previously Presented) A method of claim 8, wherein  
 R is a substituted or unsubstituted C<sub>1</sub>-C<sub>7</sub> alkyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>7</sub> alkenyl group, a substituted or unsubstituted group defined by Y-Ar-(CH<sub>2</sub>)<sub>m</sub>- or by Z-(CH<sub>2</sub>)<sub>n</sub>-;  
 Ar is phenyl;  
 Y is H, Cl, Br, I, NO<sub>2</sub>, R<sup>1</sup>, R<sup>1</sup>O, or R<sup>1</sup>R<sup>2</sup>N;  
 Z is NC, R<sup>1</sup>O, R<sup>1</sup>OC(O), or R<sup>1</sup>OCH<sub>2</sub>CH<sub>2</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>p</sub>  
 m is 0 or 1; and  
 R<sup>1</sup> and R<sup>2</sup> are independently H, methyl, or ethyl.
10. (Previously Presented) A method of claim 8, wherein  
 X is Cl and R is -CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>5</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>7</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>11</sub>CH<sub>3</sub>, -CH(CH<sub>3</sub>)<sub>2</sub>, -CH(CH<sub>3</sub>)(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>3</sub>OH, -(CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CH<sub>2</sub>CN, -CH<sub>2</sub>CH=CH<sub>2</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>;  
 X is Br and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>; or  
 X is I and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>.
11. (Previously Presented) A method of claim 8, wherein the cyanodithiocarbamate of formula (I) is hexyl chloromethyl cyanodithiocarbamate.
12. (Previously Presented) A method of claim 8, wherein the hide is a wet blue hide, a wet white hide, a vegetable-tanned hide or an oil-tanned hide.

13. (Previously Presented) A method of claim 10, wherein the hide is a wet blue hide, a wet white hide, a vegetable-tanned hide or an oil-tanned hide.
14. (Previously Presented) A method of claim 11, wherein the hide is a wet blue hide, a wet white hide, a vegetable-tanned hide or an oil-tanned hide.
15. (Previously Presented) A method of claim 8, wherein the tanning liquor is a pickling liquor.
16. (Previously Presented) A method of claim 8, wherein the cyanodithiocarbamate of formula (I) is present in the tanning liquor in an amount ranging from about 5 to about 500 parts per million.
17. (Previously Presented) A liquor for use in a leather-tanning process comprising a cyanodithiocarbamate of formula (I):



X is a halogen;

R is a substituted or unsubstituted C<sub>1</sub>-C<sub>14</sub> alkyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>14</sub> alkenyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>14</sub> alkynyl group, a substituted or unsubstituted group defined by Y-Ar-(CH<sub>2</sub>)<sub>m</sub>- or by Z-(CH<sub>2</sub>)<sub>n</sub>-;

Ar is a substituted or unsubstituted aryl group selected from phenyl, and naphthyl;

Y is H, halogen, NO<sub>2</sub>, R<sup>1</sup>, R<sup>1</sup>O, or R<sup>1</sup>R<sup>2</sup>N;

Z is NC, R<sup>1</sup>O, R<sup>1</sup>OC(O), or R<sup>1</sup>OCH<sub>2</sub>CH<sub>2</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>p</sub>;

m ranges from 0 to 3;

n ranges from 0 to 3;

p ranges from 0 to 3; and

R<sup>1</sup> and R<sup>2</sup> are independently H, substituted or unsubstituted C<sub>1</sub>-C<sub>5</sub> alkyl.

18. (Previously Presented) A liquor of claim 17, wherein

R is a substituted or unsubstituted C<sub>1</sub>-C<sub>7</sub> alkyl group, a substituted or unsubstituted C<sub>2</sub>-C<sub>7</sub> alkenyl group, a substituted or unsubstituted group defined by Y-Ar-(CH<sub>2</sub>)<sub>m</sub>- or by Z-(CH<sub>2</sub>)<sub>n</sub>;

Ar is phenyl;

Y is H, Cl, Br, I, NO<sub>2</sub>, R<sup>1</sup>, R<sup>1</sup>O, or R<sup>1</sup>R<sup>2</sup>N;

Z is NC, R<sup>1</sup>O, R<sup>1</sup>OC(O), or R<sup>1</sup>OCH<sub>2</sub>CH<sub>2</sub>(OCH<sub>2</sub>CH<sub>2</sub>)<sub>p</sub>

m is 0 or 1; and

R<sup>1</sup> and R<sup>2</sup> are independently H, methyl, or ethyl.

19. (Currently Amended) A liquor of claim 17, wherein  
 X is Cl and R is -CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>5</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>7</sub>CH<sub>3</sub>,  
~~(CH<sub>2</sub>)<sub>11</sub>CH<sub>3</sub>~~, ~~-(CH<sub>2</sub>)<sub>11</sub>CH<sub>3</sub>~~, -CH(CH<sub>3</sub>)<sub>2</sub>, -CH(CH<sub>3</sub>)(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, -(CH<sub>2</sub>)<sub>2</sub>OH,  
 -(CH<sub>2</sub>)<sub>3</sub>OH, -(CH<sub>2</sub>CH<sub>2</sub>O)<sub>2</sub>CH<sub>2</sub>CH<sub>2</sub>OH, -(CH<sub>2</sub>)<sub>2</sub>CO<sub>2</sub>H, -CH<sub>2</sub>CH<sub>2</sub>CN, -CH<sub>2</sub>CH=CH<sub>2</sub>, or  
 -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>;  
 X is Br and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or -CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>; or  
 X is I and R is -(CH<sub>2</sub>)<sub>3</sub>CH<sub>3</sub>, or ~~CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>~~, ~~-CH<sub>2</sub>C<sub>6</sub>H<sub>5</sub>~~.
20. (Previously Presented) A liquor of claim 17, wherein the cyanodithiocarbamate of formula (I) is hexyl chloromethyl cyanodithiocarbamate.
21. (Previously Presented) A liquor according to claim 17, wherein the liquor is selected from a pickling liquor, a chrome-tanning liquor, a white-tanning liquor, a vegetable-tanning liquor, an oil-tanning liquor, a post-tan washing liquor, a retanning liquor, a dye liquor, and a fatliquor; and wherein the microorganism is algae, fungi, or bacteria; and the cyanodithiocarbamate of formula (I) is present in the tanning liquor in an amount ranging from about 5 to about 500 parts per million.
22. (Previously Presented) A liquor according to claim 19, wherein the liquor is selected from a pickling liquor, a chrome-tanning liquor, a white-tanning liquor, a vegetable-tanning liquor, an oil-tanning liquor, a post-tan washing liquor, a retanning liquor, a dye liquor, and a fatliquor; and wherein the microorganism is algae, fungi, or bacteria; and the cyanodithiocarbamate of formula (I) is present in the tanning liquor in an amount ranging from about 5 to about 500 parts per million.
23. (Previously Presented) A liquor according to claim 20, wherein the liquor is selected from a pickling liquor, a chrome-tanning liquor, a white-tanning liquor, a vegetable-

tanning liquor, an oil-tanning liquor, a post-tan washing liquor, a retanning liquor, a dye liquor, and a fatliquor; and wherein the microorganism is algae, fungi, or bacteria; and the cyanodithiocarbamate of formula (I) is present in the tanning liquor in an amount ranging from about 5 to about 500 parts per million.

24. (Previously Presented) A liquor of claim 21, wherein the liquor is a pickling liquor.

25. (Previously Presented) A liquor of claim 23, wherein the liquor is a pickling liquor.

26. (Previously Presented) A liquor of claim 17, further comprising a solvent selected from methyl ethers of glycols, M-pyrol, and petroleum distillates; and a diluent selected from soybean oil, pine tree oil, cottonseed oil, corn oil, canola oil, peanut oil, palm oil, rice oil, olive oil, tung nut oil, castor bean oil, linseed oil, citrus oil, and datenut oil.

27-30. (Cancelled)